

# CLAIMS

- (1) A process for producing astaxanthin-containing lipids which comprises culturing green alga with an organic nitrogen source being used in a medium at an AN/TN ratio of 65% or less, preferably 43% or less, more preferably 35% or less, to obtain algal bodies in which astaxanthin-containing lipids have been stored.
- (2) The process according to claim 1, further including the steps of extracting the astaxanthin-containing lipids from the algal bodies and optionally purifying the extracted lipids.
- (3) The process according to claim 1, wherein the organic nitrogen source is at least one organic nitrogen source selected from the group consisting of corn steep liquor, soya bean powder, peptone, tripeptone, and polypeptone.
- (4) The process according to any one of claims 1 to 3, wherein the organic nitrogen source is used at least 0.1 g/L.
- (5) The process according to claim 4, wherein culture is performed in a reactor under the dark condition.
- (6) The process according to claim 5, wherein culture is performed under aerobic conditions.
- (7) The process according to claim 4, wherein culture is performed in a reactor under the light condition or in an outdoor, closed system.
- (8) The process according to claim 5 or 6, wherein astaxanthin is stored at a concentration of at least 10 mg/L of the culture solution or at least 40 pg/cell.